Medical Information Overload - How to Get Organized?

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What are our sources of Med Info?

- Academic reviews
- Original research
- Clinical Guidelines
- CME
- Newsletters
- Experts
- Peer-reviewed journals
- Pharmaceutical Reps
- Clinical Experience
- Advertising
- Textbooks
- Audiotapes
- Non-peer reviewed journals
- World Wide Web

What a Good Physician wants?

- To be able to maintain up-to-date knowledge spanning broad areas of medicine
- To be able to answer all clinical questions that arise during daily practice
- To provide best of care possible to his or her patients

The Facts

- Volume of medical literature is expanding at a rate of greater than 7% per year, doubling approximately every 10-15 years[1]
- 20,000 journals and 17,000 new books published annually
- Physicians are seeing more patient an hour now
- Time for keeping up-to-date is short

1. Price DS: The development and structure of the biomedical literature. In: Warren KS (Editor): *Coping with the biomedical literature: A Primer for the Scientist and Clinicians*. Praeger, 1981.

The Facts

- For every 10 questions posed, clinicians look for answers to FOUR and find answers to THREE.[1]
  - WHAT ABOUT THE OTHER 7 QUESTIONS?
    - Guesses, hunches or the "clinical experience"

1. Ely JW, Osheroff JA, Ebell MH, et al. *Analysis of questions asked by family doctors regarding patient care*. BMJ 1997;319:358–61.

How to Keep Updated?

A Strategic Approach Needed

A Paradigm Shift for Physicians

- From Memory Repositories
- To Information Managers

- From "How do I keep up with new developments in medicine?"
- To "What developments in medicine do I need to keep up with?"

The Clinician of the Future

- "I know a lot, therefore I am"
  (replaceable by a computer)
- "I think, therefore I am"
  (never replaceable by computer)
- How can we "help" make this transition?

Information Wants

- Answer to Specific Clinical Question
- Understanding of a Disease Pathophysiology
- Understanding Drug Pharmacokinetics
- Learning Clinical conditions and treatment plans
- Casual reading of topics of interest

Tools for Mastering Information[1]

- A method of being *alerted* to new information
- A tool for *finding* the information again when you need it.
- Without both:
  - You don't know that new info. is available
  - You can't find it when you do need it

1. Shaughnessy AF, Slawson DC. Are we providing doctors with the training and tools for lifelong learning? British Medical Journal 1999 (13 Nov): www.bmj.com. (http://bmj.com/cgi/reprint/319/7220/1280.pdf)

Strategies

- Constant Surveillance
  - Develop surveillance strategy to keep abreast of new developments across a broad range of subjects within your practice area
- Effective Searching
  - Develop expertise in finding specific information (relevant and valid) to answer a specific clinical question

Strategies

- Personal Data Repository
  - Develop personal repository of Patient-Oriented Evidence and Reviews for future reviewing
- Casual Fun Reading
  - Establish protected time for regular fun reading to keep up with specific area of interest

Constant Surveillance

- Scanning for New and Important Information
- Looking for information showing a direct and relevant benefit to patients.
- Information retrieval should take minimal amount of time

Constant Surveillance

- Good Available Surveillance Tool
  - Should publish POEMs or Evidence-Based Reviews / Summaries
  - Cover your field of interest
  - Examples
    - Newsletters
    - Updates
    - Abstracting Services
    - Answers to Clinical Queries

Constant Surveillance

- Newsletter
  - Provide cursory reviews of current literature
  - Specialty Relevant content
  - No set validity criteria
  - Examples:
    - FP News
    - Medscape

Constant Surveillance

- Updates
  - Expert-based Topic Reviews
  - Comparable to a “lecture”
  - Validity can not be assessed without referencing original articles
  - Examples:
    - Audio Digest (http://www.audio-digest.org/)
    - The Medical Letter (http://www.medletter.com)
    - Prescriber’s Letter (http://www.prescribersletter.com)

Constant Surveillance

- Abstracting Service
  - Collection of reviews from different resources
  - Examples:
    - *JAMA abstracts column*
    - *AFP "Tips from other journals"*
    - *Journal Watch (www.jwatch.org)*
    - *ACP Journal Club (www.acpjc.org)*
    - *Evidence-Based Practice*
    - *Medical InfoPOEMs (www.infopoems.com)*
    - *JFP POEMs (www.jfponline.org)*

Constant Surveillance

- Answers to Common Clinical Questions
  - Services that provide evidence-based answers to common clinical problems
  - Examples:
    - *JFP's Clinical Queries*
    - *JFP's Applied Evidence*
    - *BMJ's Clinical Evidence*
    - *Bandolier (www.jr2.ox.ac.uk/bandolier)*

Effective Searching

- If searching for a Broad Topic, start with a subject search engines – Yahoo, Looksmart
- Perform a keyword search for specific or narrow topics on keyword search engines – Google or AltaVista
- Be Specific. “Drugs for cellulitis in diabetic foot”

Effective Searching

- Arrange search terms from general to specific
- Use quotation marks, e.g. “diabetic nephropathy” for more relevant search
- Avoid misspellings, mistakes, redundant terms

Effective Searching

- Google - best search engine
  - www.google.com
- You can build on the search by adding additional words to the search
  - e.g. add “patient education” to the term in the search box; then add “Spanish”

Google Advanced Search

- You can limit your searches
  - You can choose the language
  - You can determine how current the web sites are
  - Also has Search Tips at the top of the page

Sources of Information

- General Topics (Diseases)
  - Humans
  - Textbooks
  - Guidelines
  - CME
- Specific Clinical Topics
  - Systematic Reviews
  - Medline
  - Guidelines
  - Textbooks

Major Medical Information Sites

- Clinical Evidence
- Dynamed
- ACP Journal Club
- Cochrane Database
- InfoRetriever
- National Guidelines Clearinghouse
- FIRST Consult / MD Consult
- Skolar MD
- Up To Date

Clinical Evidence

- Database of Clinical Questions covering the effects of treatments and interventions based on best available research
- Topics are selected for their relevance to clinical practice
- Rigorous peer-reviewed information

ACP Journal Club

- About 100 journals systematically surveyed
- Highest-validity articles abstracted
- Structured abstracts to guide critical appraisal
- Clinical commentary
- Included in our OVID subscription
- Limitations
  - individual article summaries may not account for the "big picture"

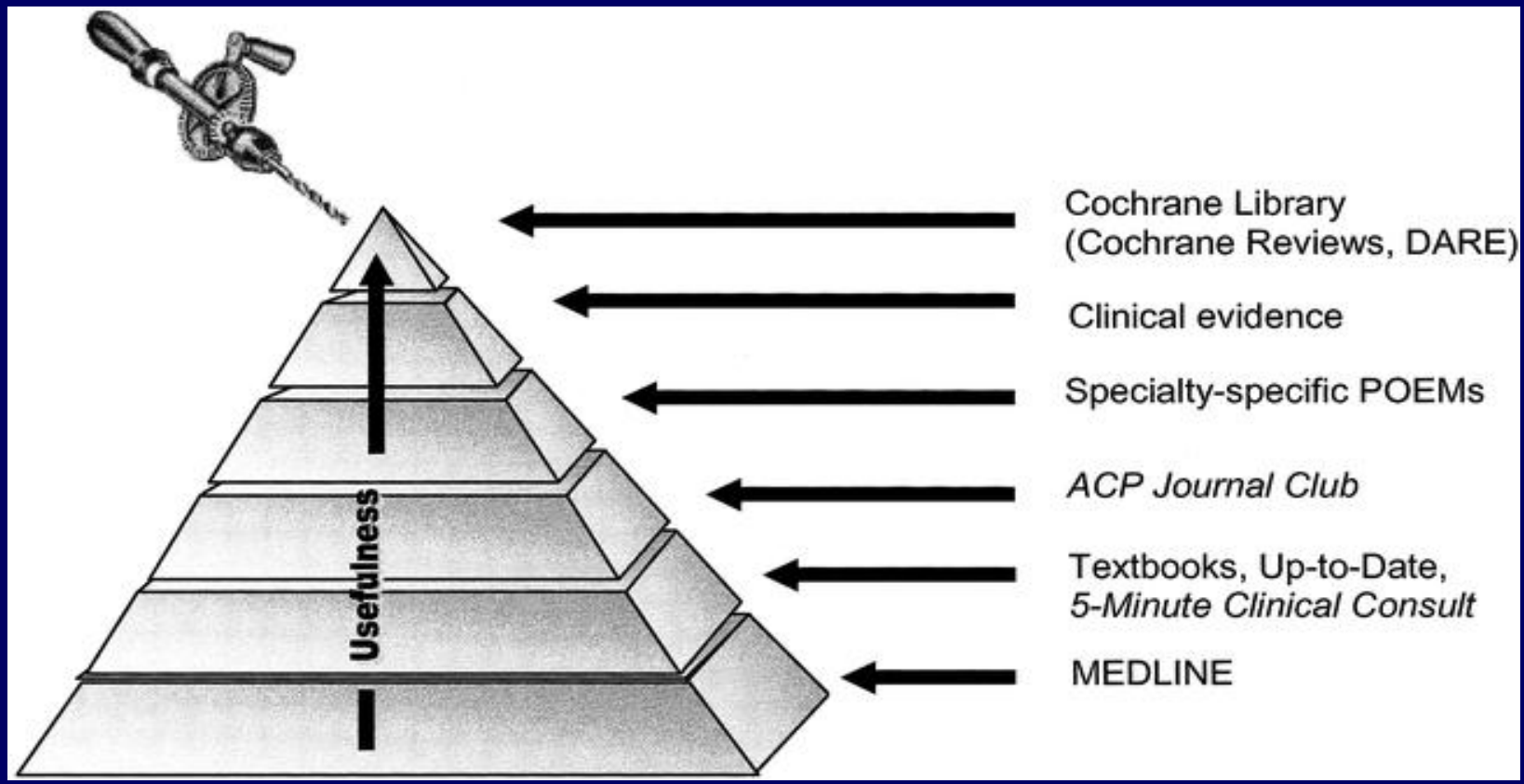
Cochrane Library

- The current resource with the highest methodological rigor
- For each clinical question, all of the English literature meticulously searched for randomized trials
- Large systematic reviews with valid methods + collaborative effort
- Conclusions are based on all the evidence from valid randomized trials

Cochrane Library

- Included in OVID subscription
- Limitations
  - limited to English
  - only addresses questions amenable to randomized trials
  - most of medicine has not been studied enough to allow for conclusions

Drilling Down for Information

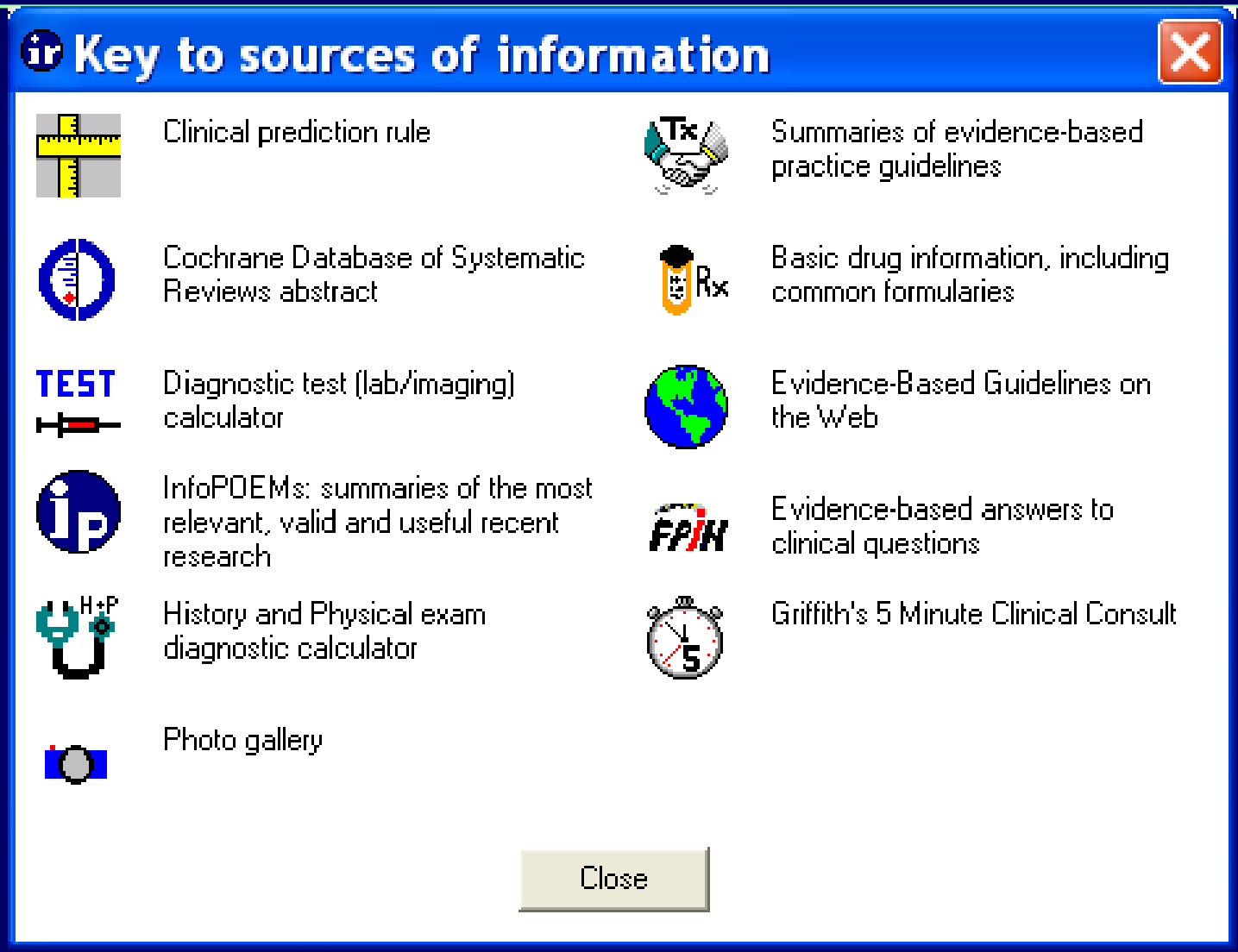


J Med Libr Assoc. 2002 July; 90 (3): 298

Medical InfoRetriever

- 104 journals surveyed for Evidence-Based Practice Newsletter
- Over 1300 article synopses
- Cochrane abstracts, 5MCC
- Selected evidence-based guidelines
- Basic drug info
- Clinical calculators/prediction rules
- POEMS
- Comes in web, desktop and PDA versions

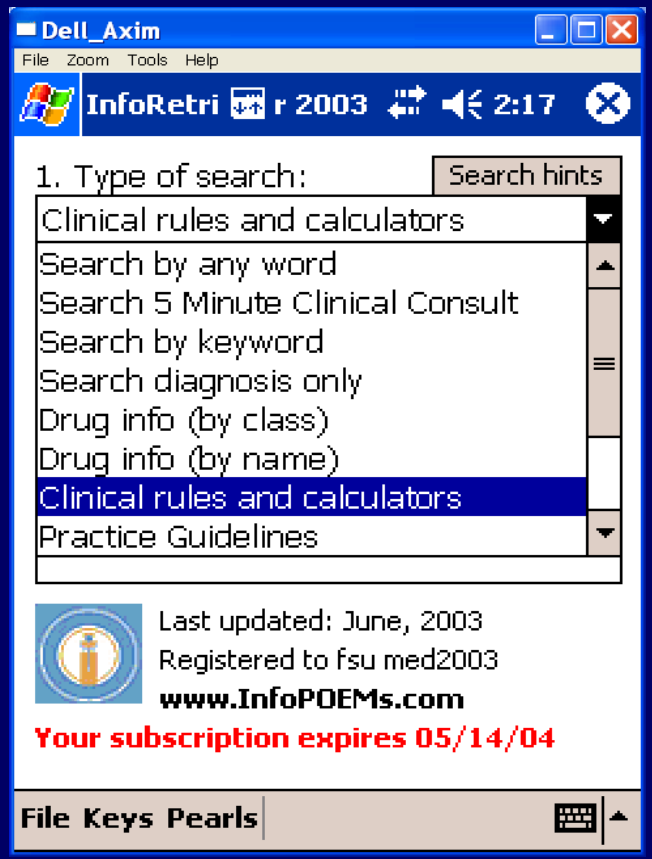
Symbols

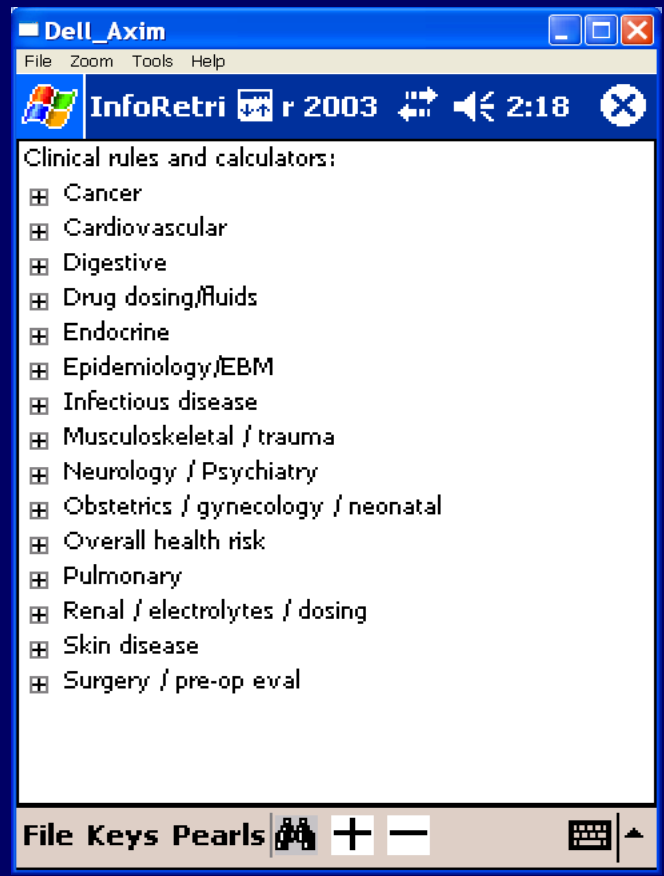

Key to sources of information
Clinical prediction rule
Summaries of evidence-based practice guidelines
Cochrane Database of Systematic Reviews abstract
Basic drug information, including common formularies
TEST
Diagnostic test (lab/imaging) calculator
Evidence-Based Guidelines on the Web
InfoPOEMs: summaries of the most relevant, valid and useful recent research
Evidence-based answers to clinical questions
H+P
History and Physical exam diagnostic calculator
Griffith's 5 Minute Clinical Consult
Photo gallery
Close

InfoRetriever Features

- Pearls – PDA; Favorites on Desktop
- Levels of Evidence explained
- ICD-9 coding
- E/M coding wizard
- Immunization Guide

InfoRetriever Calculators





Guidelines

- Guidelines may be
  - Explicit evidence-based
  - Evidence-based
  - Research-based (highly referenced)
  - Opinion-based
  - “expert consensus”

FIRST Consult

- Web and PDA based Clinical Information System
- Provides continuously updated, evidence-based guidance on the latest in patient evaluation, diagnosis and management

Skolar MD

- Internet based Knowledge System
- Integrates seamlessly with OVID Technologies and Lippincott Williams & Wilkins Journals.

UpToDate

- Areas covered
  - Adult Primary Care and Family Practice
  - All medical subspecialties
  - OB/GYN and Women's Health
  - Pediatrics (in development)
- Over 50,000 pages of text covering 6,000 topics
  - Fully referenced with over 160,000 abstracts
  - More than 15,000 graphics
  - Drug database
  - Patient information

UpToDate

- Would not suggest UpToDate for:
  - Very rare conditions (suggest Medline)
  - Very recent information (Information published within the last four months may not be included)
  - Quick answer to specific clinical question
- Would suggest for:
  - Learning about a disease condition or drug pharmacokinetics
  - “Comprehensive Textbook”

Major Reference Sites

- FREE Internet Resource
  - TripDatabase.com ***
  - eMedicine.com ****
  - MerckMedicus.com *****

TRIP Database

- Turn Research Into Practice (TRIP)
- Searches over 75 sites of high-quality medical information
- Non subscribers are currently restricted to 5 free searches per week

eMedicine.com

- Comprises the largest and most current Clinical Knowledge Base available to physicians and health professionals
- Content-updated 24/7-provides the latest practice guidelines in 62 medical specialties
- Content undergoes 4 levels of physician peer review plus an additional review by a PharmD

MerckMedicus.com

- Free for Licensed Physician
- Cutting edge resources
- Textbooks
- Patient Education Handouts
- Specialty Specific Resources

Personal Data Repository

- Information found while surveillance that could be useful for future
  - Example:
    - New drug to treat diabetes – its indications and side effects
- Two ways of keeping personal repository
  - Manual – Index cards
  - Electronic – PC/PDA (easy search ability)
    - Database
    - Word File

Personal Data Repository

- PC/PDA Options
  - To Do List
  - Memopad
  - Spreadsheets
    - MS Excel
    - Documents to Go
  - Word file
    - MS Word
    - Documents to Go

Personal Data Repository

- PC/PDA Options
  - Databases
    - Lightweights-single tables with one or two types of data (i.e. List, dbNow, and Trans/Form).
    - Middleweights-basic form design, simple relational features, and basic desktop companion products (i.e. HanDBase, JFile, ThinkDB, and MobileDB).
    - Heavyweights-based on powerful desktop programs such as MS Access, Oracle, and FileMaker. Often require professional programming. More useful for enterprise applications. Examples include: Pendragon Forms, Satellite Forms, FileMaker Mobile, Oracle Lite, etc.

Personal Data Repository

- Palm OS Databases
  - List http://www.magma.ca/~roo/list/list.html
  - PDA Toolbox http://www.pdatoolbox.com
  - Trans/Form http://www.bebopsoft.com/
  - DbNow http://www.pocketexpress.com
  - JFile http://www.land-j.com/jfile.html
  - HanDBase http://www.ddhsoftware.com/
  - ThinkDB http://www.thinkingbytes.com/
  - MobileDB http://www.handmark.com/products/mobiledb/
  - Pendragon Forms http://www.pendragon-software.com/
  - Satellite Forms http://www.pumatech.com
  - Marietta DB http://www.mariettasystems.com
  - FileMaker Mobile http://www.filemaker.com
  - IBM DB2 Everyplace http://www.ibm.com
  - Sybase UltraLite http://www.sybase.com
  - Oracle Lite http://www.oracle.com

Personal Data Repository

- Pocket PC Database
  - Data on the Run http://www.biohazardsoftware.com/start.htm
  - HanDBase http://www.ddhsoftware.com/
  - VisualCE http://www.syware.com
  - abcDB http://www.pocketsoft.ca
  - DB Anywhere http://www.handango.com
  - SprintDB Pro http://www.kaione.com
  - Pocket Database (by Surerange) http://www.surerange.com/database.html
  - Pocket Database (by Pocket Innovations) http://www.pocket-innovations.com/Products
  - Pocket DB http://members.aol.com/doanc/dbce.html
  - Satellite Forms http://www.pumatech.com
  - Wireless Database www.kelbran.com
  - db2Hand http://www.smartidz.com
  - Data Anywhere http://www.smartidz.com
  - Oracle Light http://www.oracle.com

Casual Fun Reading

- Put fun back in reading
- “Spa Treatment” for brain
- Covering topics that may or may not relate to medicine or practice
  - Examples:
    - Health Business
    - Information Technology
    - Golf
    - Poetry
    - Health Politics, etc.

For Additional Info/Comments

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